

Claims

What is claimed is:

1. A transmission system to drive a wheel comprising:  
a pair of motors, each motor comprising:  
5 a motor shaft; and,  
a drive cone coupled to a first end of the motor  
shaft;  
wherein the drive cone of each motor engages opposing  
side portions of the wheel to rotate the wheel.
- 10 2. The transmission system of claim 1, where the drive  
cone is shaped to conform to a shape of the wheel.
3. The transmission system of claim 1, where the motor  
shafts of the pair of motors are parallel to each other.
4. The transmission system of claim 1, further comprising  
15 a tachometer system coupled to one motor shaft of one of the  
motors in the pair of motors to measure the rotation of the motor  
shaft.
5. The transmission system of claim 4, wherein the  
tachometer system comprises a tachometer disk coupled to the  
20 motor shaft of one of the motors in the pair of motors.

6. The transmission system of claim 5, wherein the tachometer disk includes a plurality of openings surrounding the motor shaft.

7. The transmission system of claim 4, wherein the tachometer system comprises an optical encoder configured to read a rotation of a tachometer disk coupled to the motor shaft.

8. The transmission system of claim 1, where the drive cone is operatively disengageable from the wheel.

9. A scooter comprising:  
a fuselage having a front portion and a rear portion;  
a rear wheel rotatably mounted at the rear portion of the fuselage;  
a standing platform supported by the fuselage for supporting a rider; and,  
a transmission system mounted under the standing platform in the rear portion of the fuselage comprising a motor with a wheel engagement element being operatively coupled with the rear wheel to allow the wheel engagement element to rotate the rear wheel when the wheel engagement element is engaged with the rear wheel.

10. The scooter of claim 9, where the motor includes a shaft, and where the motor is mounted so that the shaft is parallel with a longitudinal axis running from the front portion to the rear portion of the fuselage.

11. The scooter of claim 9, where the rear wheel includes a sidewall and the wheel engagement element is shaped to engage the sidewall.

12. The scooter of claim 9, where the rear wheel includes  
5 a sidewall and the wheel engagement element is a cone.

13. The scooter of claim 9, further comprising a battery system mounted in the fuselage under the standing platform.

14. The scooter of claim 13, wherein the fuselage comprises a floor pan portion with a shape and the battery system  
10 comprises a battery shaped to conform to the shape of the floor pan.

15. The scooter of claim 9, where the fuselage has a U-shaped cross-section.

16. The scooter of claim 9, where the fuselage is tubular  
15 in shape.

17. The scooter of claim 9, where the rear wheel includes a sidewall and the wheel engagement element is shaped to engage the sidewall.

18. The scooter of claim 9, where the transmission  
20 mechanism further comprises a second motor with a second wheel engagement element mounted in parallel to the motor and operatively coupled with the rear wheel to allow the second wheel

engagement element to rotate the rear wheel when the second wheel engagement element is engaged with the rear wheel.

19. The scooter of claim 9, where the transmission mechanism includes a hinged mechanism to control the contact  
5 between the wheel engagement element and the wheel.

20. The scooter of claim 19, where the hinged mechanism is operable by a cable to control the contact between the wheel engagement element and the wheel.

21. The scooter of claim 19, where the hinged mechanism is  
10 normally in a state that allows the wheel engagement element to be engaged with the rear wheel.

22. The scooter of claim 19, where the hinged mechanism is normally in a state that allows the wheel engagement element to be disengaged with the rear wheel.

15 23. The scooter of claim 9, where the motor includes a shaft having a first end and a second end, wherein the wheel engagement is mounted on the first end and a tachometer system is mounted on the second end.

24. The scooter of claim 23, wherein the tachometer system  
20 comprises a tachometer disk mounted on the second end of the shaft of the motor.

25. The scooter of claim 24, wherein the tachometer disk includes a plurality of openings displaced around the second end of the shaft of the motor.

26. The scooter of claim 23, wherein the tachometer system  
5 comprises an optical encoder mounted on the second end of the shaft of the motor to determine a rotation of the shaft of the motor.

27. A transmission system comprising:  
a motor;  
10 a first drive cone coupled the motor; and,  
a drive cone engagement mechanism configured to allow the first drive cone to be operatively coupled with a wheel to rotate the wheel.

28. The transmission system of claim 27, further  
15 comprising a second motor with a second drive cone mounted in parallel with the first drive cone, and the drive cone engagement mechanism is further configured to allow the second drive cone to be operatively coupled with the wheel to rotate the wheel.

29. The transmission system of claim 27, wherein the drive  
20 cone engagement mechanism comprises a hinged mechanism, operable by a cable, to vary the contact between the first drive cone and the wheel.

30. The transmission system of claim 27, wherein the drive cone engagement mechanism is normally in a state such that the first drive cone is engaged with the wheel.